



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/023,023	11/28/2001	Charles A. Drake		2401

7590 10/21/2004  
RICHMOND, HITCHCOCK,  
FISH & DOLLAR  
P.O. Box 2443  
Bartlesville, OK 74005

EXAMINER

GRIFFIN, WALTER DEAN

ART UNIT	PAPER NUMBER
----------	--------------

1764

DATE MAILED: 10/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/023,023

Applicant(s)

DRAKE ET AL.

Examiner

Walter D. Griffin

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) 18-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

In view of the Appeal Brief filed on August 16, 2004, PROSECUTION IS HEREBY REOPENED. The previous grounds of rejection are withdrawn and new grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
- (2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-15 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Logan et al. (Thiophene hydrodesulfurization over bimetallic and promoted nitride catalysts).

The Logan reference discloses a nitrated and sulfided catalyst that comprises cobalt, molybdenum, and an inorganic oxide. The inorganic oxide is  $\gamma$ -alumina. The CoO precursor is

Art Unit: 1764

loaded on the support in amounts of 6.7 wt% and 10.6 wt% and the MoO<sub>3</sub> precursor is loaded on the support in amounts of 12.8 wt% and 20.4 wt%. Therefore, the amount of cobalt, molybdenum, and alumina in the catalyst is within the claimed ranges. The catalyst is nitrified first and then sulfided. The nitrifying and sulfiding treatments are performed prior to the use of the catalyst in a reaction. Therefore, the nitrifying and sulfiding treatments disclosed by Logan are considered to be the same as the claimed pre-nitrifying and pre-sulfiding.

The Logan reference also discloses a method for making the catalyst. The method comprises contacting the alumina support with a cobalt compound and a molybdenum compound to produce a catalyst precursor. Coimpregnation of the alumina with aqueous solutions of ammonium heptamolybdate and cobalt nitrate is disclosed. The catalyst precursor is then nitrified to produce a nitrified cobalt and molybdenum catalyst. This nitrifying step is performed by contacting the catalyst precursor with ammonia at temperatures ranging from 673 to 970K (400° to 697°C). This nitrified catalyst is then sulfided to produce a nitrified and sulfided cobalt and molybdenum catalyst. This sulfiding step is performed by contacting the nitrified catalyst with hydrogen sulfide at a temperature of 623K (350°C). See sections 2.1 and 3.2.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1764

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Logan et al. (Thiophene hydrodesulfurization over bimetallic and promoted nitride catalysts) in view of Kemp (US 5,062,947).

As discussed above, the Logan reference does not disclose the use of carbon disulfide as the sulfur compound used in the sulfiding step.

The Kemp reference discloses the sulfiding of a catalyst that contains cobalt and molybdenum on a support by using sulfur compounds such as hydrogen sulfide and carbon disulfide. See column 2, lines 16-35 and column 8, lines 9-15.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Logan by using carbon disulfide as the sulfiding agent as suggested by Kemp because Kemp discloses that carbon disulfide is equivalent to the hydrogen sulfide sulfiding agent disclosed by Logan and therefore the use of carbon

Art Unit: 1764

disulfide in the process of Logan would result in the expectation that the catalyst of Logan would be effectively sulfided.

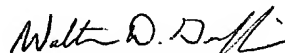
### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art not relied upon discloses nitrated catalysts.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter D. Griffin whose telephone number is (571) 272-1447. The examiner can normally be reached on M-F 6:30 to 4:00 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Walter D. Griffin  
Primary Examiner  
Art Unit 1764

WG  
October 19, 2004

  
Glenn Caldarola  
Supervisory Patent Examiner  
Technology Center 1700